Data Sheet (Cat.No.TMPY-01011)

TargetMol

FGFR1 Protein, Human, Recombinant (His)

General Information

Synonyms:	KAL2;FLT2;FGFBR;HRTFDS;OGD;FLG;HBGFR;bFGF-R-1;CD331;fibroblast growth factor receptor 1;CEK;BFGFR;FLT-2;HH2;N-SAM;FGFR-1
Protein Construction:	A DNA sequence encoding the human FGFR1 (NP_075594.1) extracellular domain (Met 1-Glu 285) was expressed with C-terminal polyhistidine tag. Predicted N terminal: Arg 22
Species:	Human
Expression Host:	HEK293 Cells
Accession:	H9FRD4
Molecular Weight:	31 kDa (predicted); 50-55 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	1.Measured by its ability to inhibit FGF-acidic dependent proliferation of Balb/c 3T3 mouse fibroblasts. The ED50 for this effect is typically 40-300 ng/mL. 2.Loaded Recombinant Human FGFR1 Protein, His Tag on His1K Biosensor, can bind Recombinant Human FGF1 Protein, no Tag with an affinity constant of 2.87 nM as determined in BLI assay (QC tested).
Purity:	> 98 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

FGFR1, also known as CD331, belongs to the fibroblast growth factor receptor subfamily where amino acid

sequence is highly conserved between members and throughout evolution. FGFR family members differ from one another in their ligand affinities and tissue distribution. Fibroblast growth factors (FGFs) (FGF1 - 10 and 16 - 23) are mitogenic signaling molecules that have roles in angiogenesis, wound healing, cell migration, neural outgrowth and embryonic development. FGFs bind heparan sulfate glycosaminoglycans, which facilitates dimerization (activation) of FGF receptors. FGFR1 is a full-length representative protein consists of an extracellular region, composed of three immunoglobulin-like domains, a single hydrophobic membrane-spanning segment and a cytoplasmic tyrosine kinase domain. The extracellular portion of FGFR1 interacts with fibroblast growth factors, setting in motion a cascade of downstream signals, ultimately influencing mitogenesis and differentiation. This particular family member binds both acidic and basic fibroblast growth factors and is involved in limb induction. CD331 can be detected in astrocytoma, neuroblastoma and adrenal cortex cell lines. Some isoforms are detected in foreskin fibroblast cell lines, however isoform 17, isoform 18 and isoform 19 are not detected in these cells. Defects in FGFR1 are a cause of Pfeiffer syndrome , idiopathic hypogonadotropic hypogonadism, Kallmann syndrome type 2, osteoglophonic dysplasia and trigonocephaly non-syndromic.Cancer ImmunotherapyImmune CheckpointImmunotherapyTargeted Therapy

Reference

Schlessinger J,et al.(2000) Crystal structure of a ternary FGF-FGFR-heparin complex reveals a dual role for heparin in FGFR binding and dimerization. Mol Cell. 6(3):743-50.

Dodé C,et al.(2007) Novel FGFR1 sequence variants in Kallmann syndrome, and genetic evidence that the FGFR1c isoform is required in olfactory bulb and palate morphogenesis. Hum Mutat. 28(1): 97-8.

Kim HG,et al.(2005) Hypogonadotropic hypogonadism and cleft lip and palate caused by a balanced translocation producing haploinsufficiency for FGFR1. J Med Genet. 42(8):666-72.

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